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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,195	03/12/2004	Junyan Dai	5347.218	8744
20792 7590 04/17/2007 MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627			EXAMINER LEE, SIN J	
			ART UNIT	PAPER NUMBER
			1752	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/17/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/800,195	Applicant(s) DAI ET AL.	
	Examiner Sin J. Lee	Art Unit 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12,13,19-21,26,32-35,48 and 52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12,13,26,32-35 and 48 is/are allowed.
- 6) ☒ Claim(s) 20,21 and 52 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants canceled claim 45.
2. In view of the amendment, the effective filing date of present claim 48 is March 12, 2003. Thus, previous 102(a) rejection on claim 48 over Dai et al (Proceedings of SPIE (2003)), previous 102(b) rejection on claim 48 over Chung et al and previous 102(b) rejection on claim 48 over Dai et al (Proceedings of SPIE (2002)) are hereby withdrawn.
3. In view of the amendment, previous 103(a) rejection on claim 26 over Reed'380 is hereby withdrawn.

Claim Objections

4. Claim 19 is objected to because of the following informalities: Applicants need to delete "CH₃" shown on top of the formula c. Appropriate correction is required. Also, the Examiner would like to request applicants to redraw the formulas b and c as those formulas are drawn too small to be scanned properly.
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. It is to be noted that the effective filing date of present claims 20 and 21 is March 12, 2004 since those claims are not supported in the provisional application 60/454,062 file on March 12, 2003. Even though applicants state in REMARKS that the present rejection on claims 20 and 21 over Dai et al can be overcome by filing a declaration under 37 CFR 1.131, such declaration has *not* been filed for present application.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 20 and 21 are rejected under 35 U.S.C. 102(a) as being anticipated by Dai et al ("Synthesis and Evaluation of Novel Organoelement Resists for EUV Lithography", Proceedings of SPIE, vol.5039 (2003), pg.1164-1172).

As discussed above, the effective filing date of present claims 20 and 21 is March 12, 2004. On pg.1166, Dai teaches present inventions of claims 20 and 21.

9. Claim 52 is rejected under 35 U.S.C. 102(b) as being anticipated by Chung et al ("Metallocene-Mediated Olefin Polymerization with B-H Chain Transfer Agents: Synthesis of Chain-End Functionalized Polyolefins and Diblock Copolymers" Macromolecules, vol.34 (2001), pg.8040-8050).

Chung teaches (see abstract, Scheme 1, Figure 1, Chart 2, and Figure 5) *dimesitylborane*-terminated polyolefin (which is formed by hydroboration of polyolefin by using *dimesitylborane*). Therefore, Chung teaches present invention of claim 52. Since Chung teaches incorporating boron atoms into the polyolefin by performing

hydroboration of the polyolefin using dimesitylborane, the reactive ion etch resistance of Chung's polyolefin would *inherently be increased* (the only active step required in present claim 52 is the step of incorporating boron atoms into the polymer by performing hydroboration of the polymer using dimesitylborane).

Allowable Subject Matter

10. Claims 12 and 13 are allowed, and the objected claim 19 would be allowed when the objection as addressed in Paragraph 4 above is overcome. The polymer shown in Figure 2 of Gabor et al ("Hydrosiloxane Modified Styrene-Diene Block Copolymer Resists", Proceedings of SPIE, vol.1925 (1993), pg.499-506) does not teach or suggest any of the present polymers of claims 12, 13 and 19. Claim 26 is allowed. Reed'380 does not teach or suggest present element of carborane carboxylic acid or dimesitylborane. Claims 32-35 are allowed for the reasons previously indicated. Claim 48 is allowed. Chung et al (Macromolecules) does not teach or suggest present polymer of claim 48.

Response to Arguments

11. Even though applicants state in REMARKS that the present rejection on claims 20 and 21 over Dai et al can be overcome by filing a declaration under 37 CFR 1.131, such declaration has *not* been filed for present application. Applicants argue that Chung et al does not teach a method for increasing the reactive ion etch resistance of a polymer as recited in claim 52. However, as already explained above, Chung teaches incorporating boron atoms into the polyolefin by performing hydroboration of the polyolefin using dimesitylborane, and thus, the reactive ion etch resistance of Chung's polyolefin would *inherently be increased* (the only active step required in present claim

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52 is the step of incorporating boron atoms into the polymer by performing hydroboration of the polymer using dimesitylborane).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. J. Lee

S. Lee
April 15, 2007

Sin J. Lee

SIN LEE
PRIMARY EXAMINER